BC Reco Evaluation

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Algorithm

1. Hit Association
2. Track Finding
3. View Matching

4a. Track Fitting (Ed's, Minuit)

4b. If no CandTraj, use BCCrossing

5. Clean Up Tracks

Algorithm parameters

TrkFind_n = 5

ViewMatch_n = 3

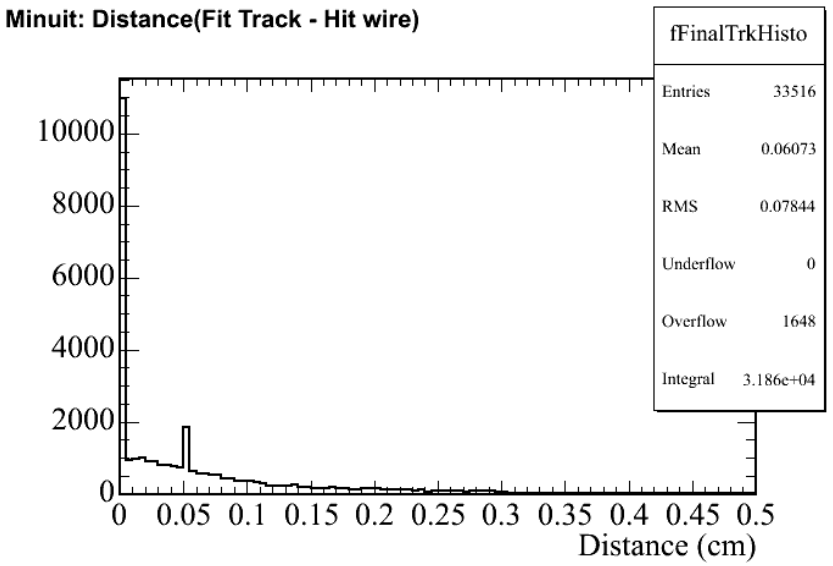
CleanUpTrk_width = 0.5 cm

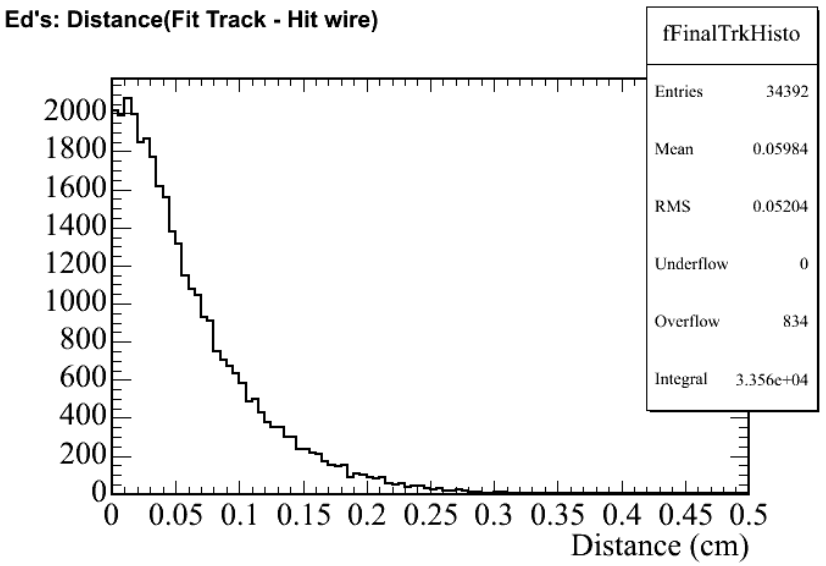
Speed Comparison

- Run 10421: 5002 events
  - Minuit: 757.47s
  - Ed's: 44.88 s

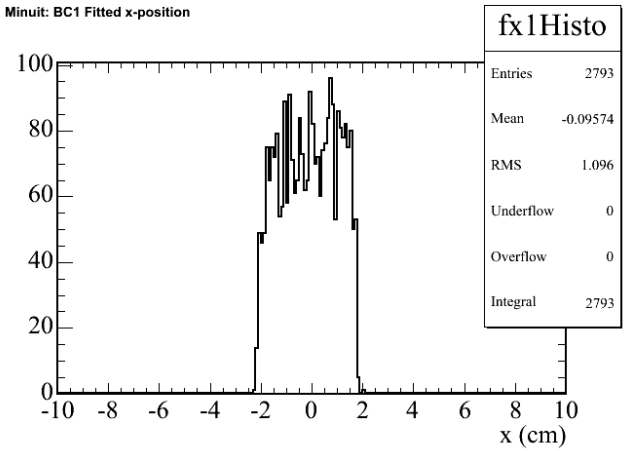
  Ed's fitting algorithm is about 17 times faster than Minuit!!!

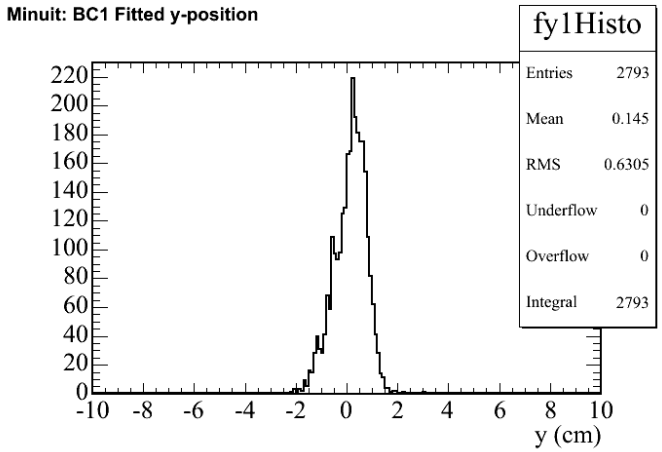
Comparison:
Distance (Fit track – Hit wire)

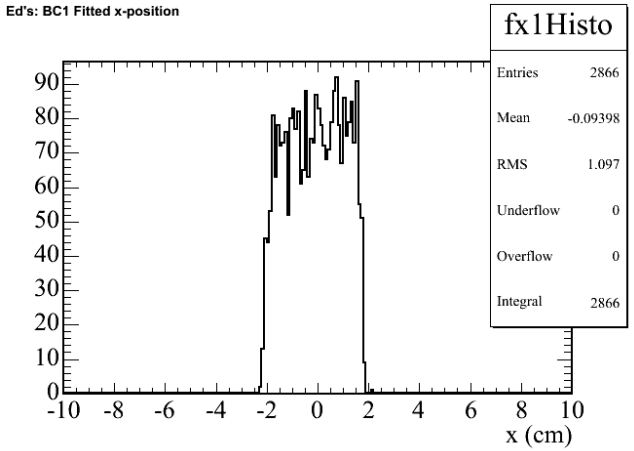


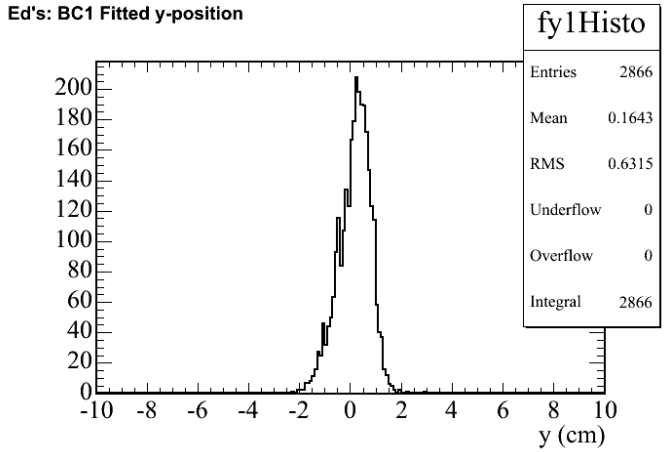


Comparison:
BC1 Fitted Position

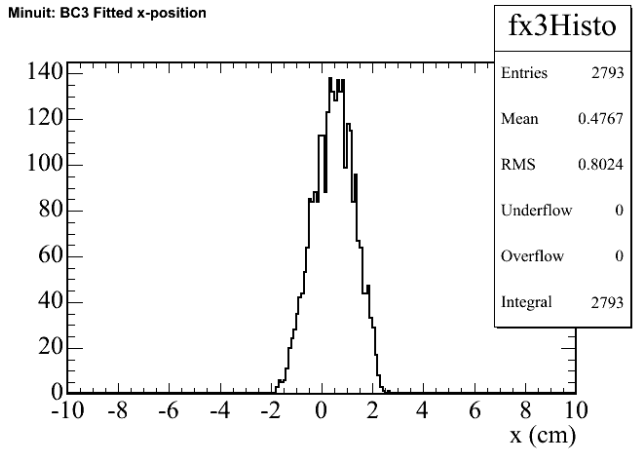


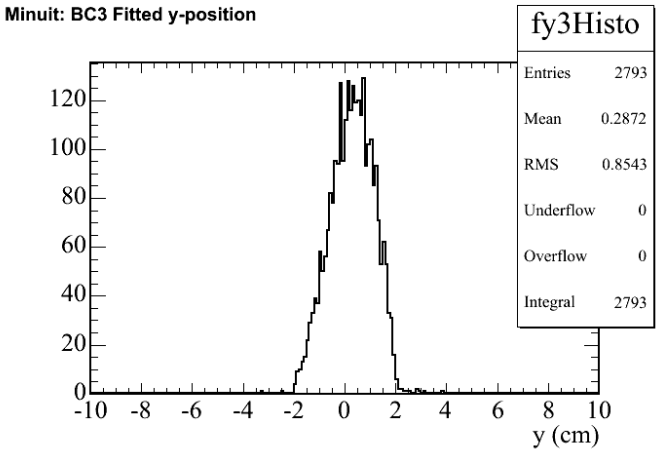


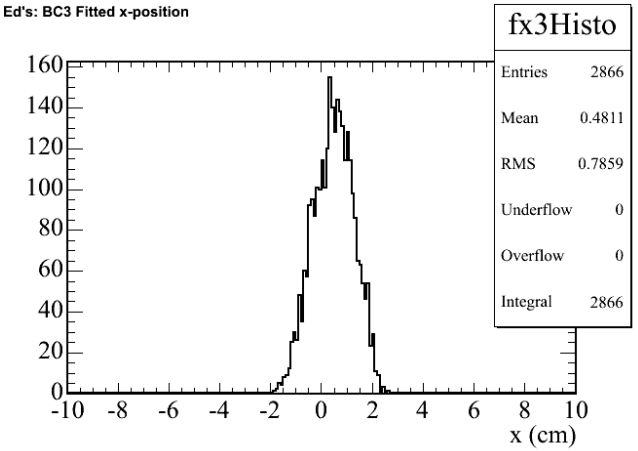


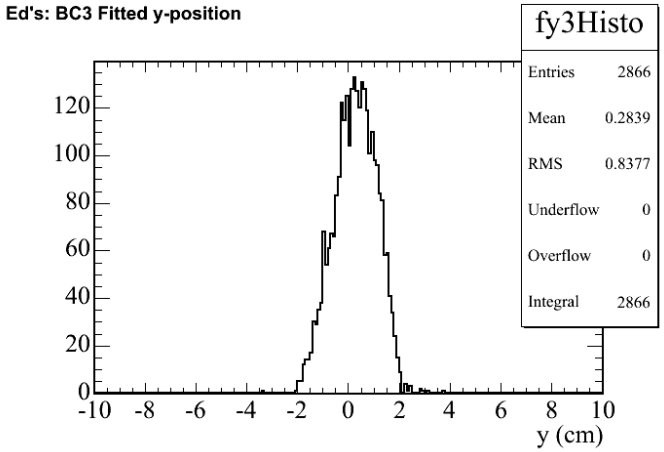


Comparison:
BC3 Fitted Position



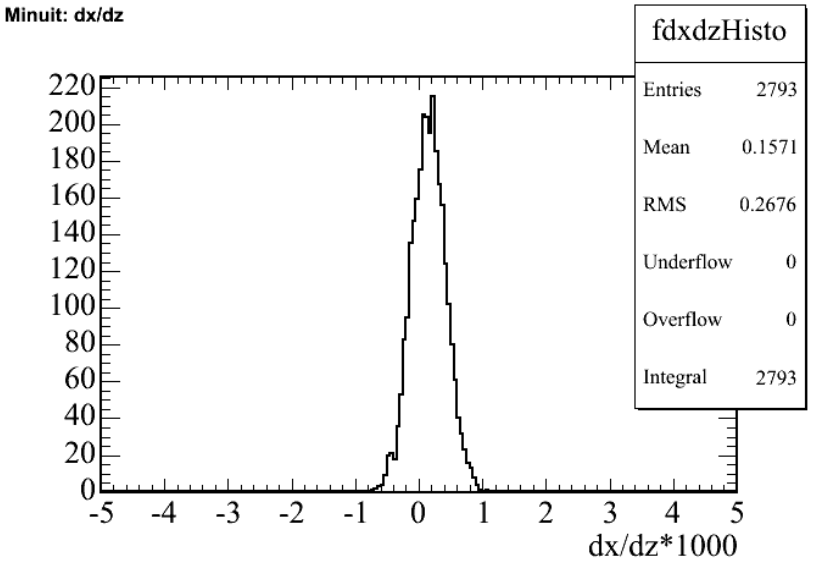




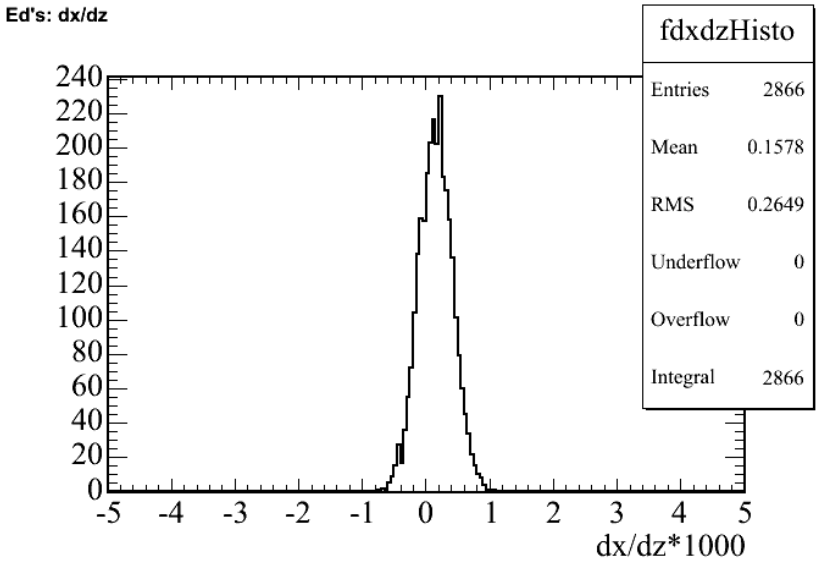


Comparison: dx/dz

Minuit: dx/dz

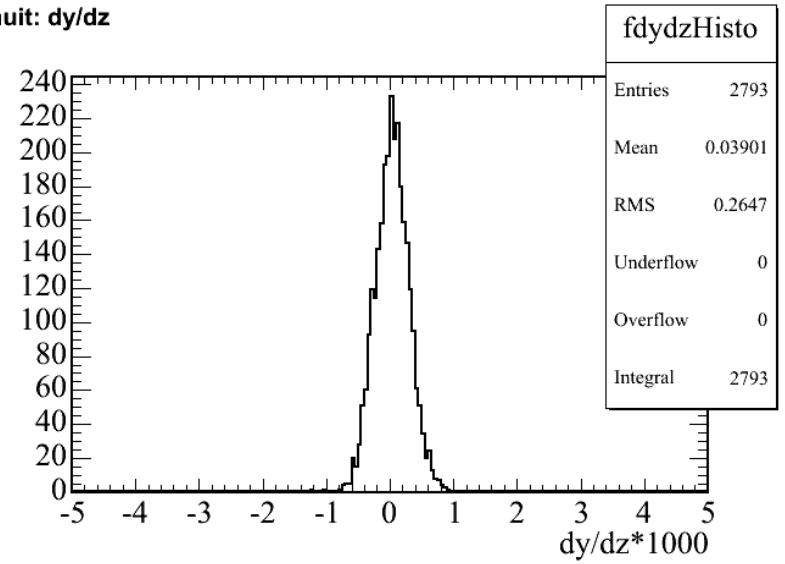


Ed's: dx/dz

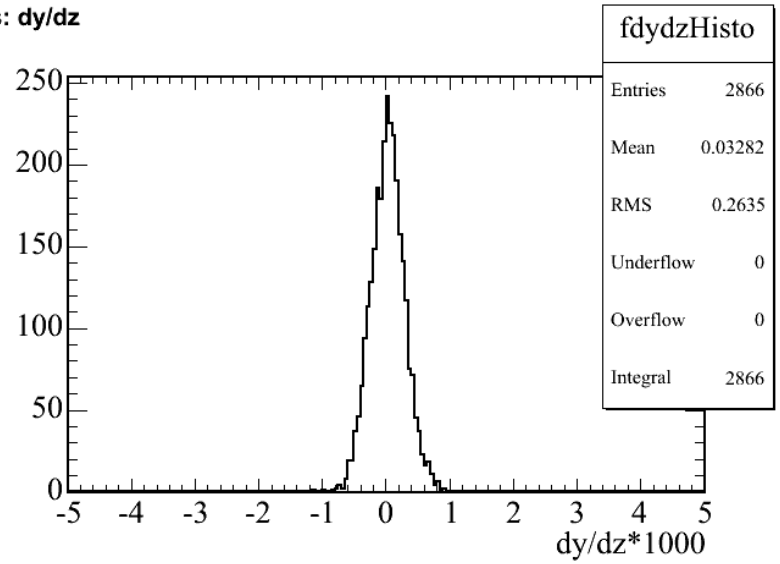


Comparison: dy/dz

Minuit: dy/dz



Ed's: dy/dz



Conclusion

- Both fitting algorithms perform similarly
- Clearly we should use Ed's algorithm because it's much faster
- Future work: make use of TDC information when fitting